

SEQUENCE LISTING

<110> Richards, Nigel Gordon John
 Chang, Christopher Harry
 Peck, Ammon B.

<120> Polynucleotides Encoding Oxalate Decarboxylase from *Aspergillus*
Niger and Methods of Use

<130> UF-314XC1

<150> US 60/404,892

<151> 2002-08-20

<160> 9

<170> PatentIn version 3.2

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<211> 1397

<212> DNA

<213> *Aspergillus niger*

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Val Asp Ala Ile Gly Glu Gly His Glu Pro Leu Pro Trp Arg Met Gly
35          40          45
Asp Gly Ala Thr Ile Met Gly Pro Arg Asn Lys Asp Arg Glu Arg Gln
50          55          60
Asn Pro Asp Met Leu Arg Pro Pro Ser Thr Asp His Gly Asn Met Pro
65          70          75          80
Asn Met Arg Trp Ser Phe Ala Asp Ser His Ile Arg Ile Glu Glu Gly
85          90          95
Gly Trp Thr Arg Gln Thr Thr Val Arg Glu Leu Pro Thr Ser Arg Glu
100         105         110
Leu Ala Gly Val Asn Met Arg Leu Asp Glu Gly Val Ile Arg Glu Leu
115         120         125
His Trp His Arg Glu Ala Glu Trp Ala Tyr Val Leu Ala Gly Arg Val
130         135         140
Arg Val Thr Gly Leu Asp Leu Glu Gly Gly Ser Phe Ile Asp Asp Leu
145         150         155         160
Glu Glu Gly Asp Leu Trp Tyr Phe Pro Ser Gly His Pro His Ser Leu
165         170         175
Gln Gly Leu Ser Pro Asn Gly Thr Glu Phe Leu Leu Ile Phe Asp Asp

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180										185					190						
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His	Thr	Pro	Lys	Ser	Val	Leu	Ala	Gly	Asn	Phe	Arg	Met	Arg	Pro	Gln						
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Thr	Phe	Lys	Asn	Ile	Pro	Pro	Ser	Glu	Lys	Tyr	Ile	Phe	Gln	Gly	Ser						
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Ser	Gly	Gly	Glu	Val	Arg	Ile	Thr	Asp	Ser	Ser	Asn	Phe	Pro	Ile	Ser						
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Lys	Thr	Val	Ala	Ala	Ala	His	Leu	Thr	Ile	Asn	Pro	Gly	Ala	Ile	Arg						
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Glu	Met	His	Trp	His	Pro	Asn	Ala	Asp	Glu	Trp	Ser	Tyr	Phe	Lys	Arg						
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Gly	Arg	Ala	Arg	Val	Thr	Ile	Phe	Ala	Ala	Glu	Gly	Asn	Ala	Arg	Thr						
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Phe	Asp	Tyr	Val	Ala	Gly	Asp	Val	Gly	Ile	Val	Pro	Arg	Asn	Met	Gly						
		340						345					350								
His	Phe	Ile	Glu	Asn	Leu	Ser	Asp	Asp	Glu	Glu	Val	Glu	Val	Leu	Glu						
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Ile	Phe	Arg	Ala	Asp	Arg	Phe	Arg	Asp	Phe	Ser	Leu	Phe	Gln	Trp	Met						
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Pro	Asp	Ala	Ala	Arg	Glu	Phe	Leu	Lys	Ser	Val	Glu	Ser	Gly	Glu	Lys						
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 <213> Aspergillus niger

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 Gly Asp Gly Ala Thr Ile Met Gly Pro Arg Asn Lys Asp Arg Glu Arg
 35 40 45
 Gln Asn Pro Asp Met Leu Arg Pro Pro Ser Thr Asp His Gly Asn Met
 50 55 60
 Pro Asn Met Arg Trp Ser Phe Ala Asp Ser His Ile Arg Ile Glu Glu
 65 70 75 80
 Gly Gly Trp Thr Arg Gln Thr Thr Val Arg Glu Leu Pro Thr Ser Arg
 85 90 95
 Glu Leu Ala Gly Val Asn Met Arg Leu Asp Glu Gly Val Ile Arg Glu
 100 105 110
 Leu His Trp His Arg Glu Ala Glu Trp Ala Tyr Val Leu Ala Gly Arg
 115 120 125
 Val Arg Val Thr Gly Leu Asp Leu Glu Gly Gly Ser Phe Ile Asp Asp
 130 135 140
 Leu Glu Glu Gly Asp Leu Trp Tyr Phe Pro Ser Gly His Pro His Ser
 145 150 155 160
 Leu Gln Gly Leu Ser Pro Asn Gly Thr Glu Phe Leu Leu Ile Phe Asp
 165 170 175
 Asp Gly Asn Phe Ser Glu Glu Ser Thr Phe Leu Leu Thr Asp Trp Ile
 180 185 190
 Ala His Thr Pro Lys Ser Val Leu Ala Gly Asn Phe Arg Met Arg Pro
 195 200 205
 Gln Thr Phe Lys Asn Ile Pro Pro Ser Glu Lys Tyr Ile Phe Gln Gly
 210 215 220
 Ser Val Pro Asp Ser Ile Pro Lys Glu Leu Pro Arg Asn Phe Lys Ala
 225 230 235 240
 Ser Lys Gln Arg Phe Thr His Lys Met Leu Ala Gln Glu Pro Glu His
 245 250 255
 Thr Ser Gly Gly Glu Val Arg Ile Thr Asp Ser Ser Asn Phe Pro Ile
 260 265 270
 Ser Lys Thr Val Ala Ala Ala His Leu Thr Ile Asn Pro Gly Ala Ile
 275 280 285
 Arg Glu Met His Trp His Pro Asn Ala Asp Glu Trp Ser Tyr Phe Lys

290	295	300
Arg Gly Arg Ala Arg Val Thr Ile Phe Ala Ala Glu Gly Asn Ala Arg		
305	310	315 320
Thr Phe Asp Tyr Val Ala Gly Asp Val Gly Ile Val Pro Arg Asn Met		
	325	330 335
Gly His Phe Ile Glu Asn Leu Ser Asp Asp Glu Glu Val Glu Val Leu		
	340	345 350
Glu Ile Phe Arg Ala Asp Arg Phe Arg Asp Phe Ser Leu Phe Gln Trp		
	355	360 365
Met Gly Glu Thr Pro Gln Arg Met Val Ala Glu His Val Phe Lys Asp		
	370	375 380
Asp Pro Asp Ala Ala Arg Glu Phe Leu Lys Ser Val Glu Ser Gly Glu		
385	390	395 400
Lys Asp Pro Ile Arg Ser Pro Ser Glu		
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 <212> DNA
 <213> Artificial sequence

<220>
 <223> PCR primer

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<210> 6
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Phe Gln Asp Lys Pro Phe Thr Pro Asp His Arg
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<210> 8
 <211> 4
 <212> PRT
 <213> Artificial sequence

<220>
 <223> Anticipated N-terminal sequence of oxalate decarboxylase of
 Aspergillus niger

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 <211> 385
 <212> PRT
 <213> Bacillus subtilis

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Ala Thr Val Lys Ile Pro Arg Asn Ile Glu Arg Asp Arg Gln Asn Pro
 20 25 30

Asp Met Leu Val Pro Pro Glu Thr Asp His Gly Thr Val Ser Asn Met
 35 40 45

Lys Phe Ser Phe Ser Asp Thr His Asn Arg Leu Glu Lys Gly Gly Tyr
 50 55 60

Ala Arg Glu Val Thr Val Arg Glu Leu Pro Ile Ser Glu Asn Leu Ala
 65 70 75 80

Ser Val Asn Met Arg Leu Lys Pro Gly Ala Ile Arg Glu Leu His Trp
 85 90 95

His Lys Glu Ala Glu Trp Ala Tyr Met Ile Tyr Gly Ser Ala Arg Val
 100 105 110

Thr Ile Val Asp Glu Lys Gly Arg Ser Phe Ile Asp Asp Val Gly Glu
 115 120 125

Gly Asp Leu Trp Tyr Phe Pro Ser Gly Leu Pro His Ser Ile Gln Ala
 130 135 140

Leu Glu Glu Gly Ala Glu Phe Leu Leu Val Phe Asp Asp Gly Ser Phe
 145 150 155 160

Ser Glu Asn Ser Thr Phe Gln Leu Thr Asp Trp Leu Ala His Thr Pro
 165 170 175
 Lys Glu Val Ile Ala Ala Asn Phe Gly Val Thr Lys Glu Glu Ile Ser
 180 185 190
 Asn Leu Pro Gly Lys Glu Lys Tyr Ile Phe Glu Asn Gln Leu Pro Gly
 195 200 205
 Ser Leu Lys Asp Asp Ile Val Glu Gly Pro Asn Gly Glu Val Pro Tyr
 210 215 220
 Pro Phe Thr Tyr Arg Leu Leu Glu Gln Glu Pro Ile Glu Ser Glu Gly
 225 230 235 240
 Gly Lys Val Tyr Ile Ala Asp Ser Thr Asn Phe Lys Val Ser Lys Thr
 245 250 255
 Ile Ala Ser Ala Leu Val Thr Val Glu Pro Gly Ala Met Arg Glu Leu
 260 265 270
 His Trp His Pro Asn Thr His Glu Trp Gln Tyr Tyr Ile Ser Gly Lys
 275 280 285
 Ala Arg Met Thr Val Phe Ala Ser Asp Gly His Ala Arg Thr Phe Asn
 290 295 300
 Tyr Gln Ala Gly Asp Val Gly Tyr Val Pro Phe Ala Met Gly His Tyr
 305 310 315 320
 Val Glu Asn Ile Gly Asp Glu Pro Leu Val Phe Leu Glu Ile Phe Lys
 325 330 335
 Asp Asp His Tyr Ala Asp Val Ser Leu Asn Gln Trp Leu Ala Met Leu
 340 345 350
 Pro Glu Thr Phe Val Gln Ala His Leu Asp Leu Gly Lys Asp Phe Thr
 355 360 365
 Asp Val Leu Ser Lys Glu Lys His Pro Val Val Lys Lys Lys Cys Ser
 370 375 380
 Lys
 385